

CLAIMS

1. An optical information recording/reproducing apparatus comprising a plurality of light sources, one of which emits an optical beam having such a wavelength as enables a larger amount of energy to be absorbed or reflected by recorded areas of a recording layer of an optical information medium than an amount of energy absorbed or reflected by non-recorded areas, said plurality of light sources emitting optical beams simultaneously to record information in an information recording mode.

- Suba) 2. An optical information recording/reproducing apparatus according to claim 1, wherein said plurality of light sources include a first light source and a second light source, at least one of which emits a light beam having a wavelength that enables a change rate of an absorption coefficient of unrecorded areas of the optical information medium to be within a range of  $\pm 5\%$  when the wavelength changes in a range of  $\pm 10\%$ .

3. An optical information recording/reproducing apparatus according to claim 1, wherein said plurality of light sources includes two light sources that are integrally provided for a single casing.

4. An optical information recording/reproducing apparatus according to claim 1, further comprising:  
a plane-parallel plate arranged at a predetermined

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angle and located at a position to which optical beams emitted from said plurality of light sources are directed.

5           5. An information recording/reproducing apparatus comprising:

                  a plurality of light sources; and  
                  an optical system for enabling optical beams from  
the light sources to be focused on a single point on a  
recording surface of an optical information medium,  
10           said optical system including an object lens  
having a focal distance of  $F1$  and a collimator lens  
having a focal distance of  $F2$ , ratio  $F2/F1$  being within  
a range of 4 to 10.

                  6. An information recording/reproducing apparatus  
15           according to claim 5, wherein said plurality of light  
sources are contained in one case.

                  7. An information recording/reproducing apparatus  
comprising:

20           a first light source for emitting an optical beam  
of a first wavelength;

                  a second light source for emitting an optical beam  
of a second wavelength different from the first  
wavelength;

25           an optical system for guiding the optical beams  
from the first and second light sources along  
substantially one optical path, said optical system  
including a prism unit for synthesizing the optical

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beams from the first and second light sources together;  
a detector for performing photoelectric conversion  
with respect to optical beams that are reflected by an  
optical information medium and guided to the detector  
by way of the object lens; and

a beam diameter varying device, arranged between  
the first and second light sources and the prism unit,  
for varying a beam spot diameter of an optical beam  
emitted from one of the first and second light sources.

8. An information recording/reproducing apparatus  
according to claim 7, wherein said beam diameter  
varying device is a cylindrical member which changes  
inner and outer diameters of a light beam incident  
thereon.

9. An information recording/reproducing apparatus  
according to claim 7, wherein said beam diameter  
varying device has a light-shielding structure for  
shielding a central portion of a light beam.

10. An information recording/reproducing apparatus  
according to claim 7, wherein said optical system  
further includes at least one of a collimator lens.

11. An information recording/reproducing apparatus  
according to claim 10, wherein said beam diameter  
varying device has a light-shielding structure for  
shielding a central portion of a light beam output from  
one of the collimator lens.

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